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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/646,783	09/22/2000	David Cotter	36-1374	1132

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EXAMINER	
SEDIGHIAN, REZA	

ART UNIT	PAPER NUMBER
2633	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/646,783	COTTER ET AL.	
	Examiner	Art Unit	
	M. R. Sedighian	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 September 2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-55* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,19-25,31-47 and 49-53* is/are rejected.

7)☒ Claim(s) *4-18,26-30,48,54 and 55* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 September 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

1. This communication is responsive to preliminary amendment of 9/22/2000 in the application of Cotter et al. for "Optical Communications Network" filed 9/22/2000. The amendments have been entered. Claims 1-55 are now pending.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 17, 23, 25-28, 34-35, 36-47, 49-50, and 52-53 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 17, it recites the limitation "the said selection" in line 2. There is insufficient antecedent basis for this limitation in the claim.

As to claim 23, it recites the limitation "the packet source" in line 3. There is insufficient antecedent basis for this limitation in the claim.

As to claim 34, it is not clear what is meant by "... means for measuring the phase of the optical packet, and means responsive to the said means for measuring for modifying the phase of a control signal applied to gate means, ...". What does it mean by means responsive to the means for measuring for modifying??

As to claim 35, it recites the limitations "the phase of the control signal" in line 5, and "the said detected phase difference" in line 6. There are insufficient antecedent basis for these limitations in the claim.

As to claim 52, it recites the limitation "the links between nodes" in line 2. There is insufficient antecedent basis for this limitation in the claim.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3, 19, 23-25, and 31-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Alan Huang (EP Publication No: 0 589 617 A1).

Regarding claims 1, 2, and 24, Huang discloses a method of operating a node (120, fig. 1) in an optical communication network (col. 1, lines 25-30, col. 2, lines 15-19) including: receiving at the node (120, fig. 1) an optical packet (col. 2, lines 33-47); and generating from the optical packet received at the node a regenerated optical packet (col. 2, line 39-40) having a phase determined by a local bit-level clock source (col. 3, lines 1-8 and 118, fig. 1) and independent of the bit-level phase of the packet received at the node (col. 1, lines 27-35, col. 8, lines 4-8). As to claim 2, Huang discloses receiving the optical packet at an input of an optical regenerator (col. 2, lines 39-40 and 150, fig. 1). As to claim 24, Huang discloses means for receiving (120, 150, fig. 1) an optical packet (col. 2, lines 33-47) and means for regenerating an optical packet (150, fig. 1).

Regarding claim 3, Huang discloses the step of generating a regenerated optical packet includes gating (col. 2, lines 44-47 and 135, fig. 1) using the received optical packet (col. 2, line 47), and an optical clock signal from the local bit-level lock source (col. 3, lines 1-8 and 118, fig. 1).

Regarding claim 19, Huang discloses processing the regenerated optical packet in optical processing means (130, fig. 1) clocked by a signal from the local optical clock source (118, fig. 1).

Regarding claim 23, as it is understood in view of above 112 problem, Huang discloses a regenerator (150, fig. 1) for optical packets (optical signals transmitted by the data transmitter 110 to the repeater 120) including a local optical pulse generator (110, fig. 1) comprising a free-running oscillator (col. 3, lines 1-8 and 118, fig. 1) independent in frequency and phase from a packet source (col. 1, lines 30-32, col. 8, lines 5-8).

Regarding claim 25, Huang discloses gate means (130, fig. 1) controlled by a data signal from an optical packet (col. 2, lines 35-40) and connected (119, fig. 1) to a local optical clock source (118, fig. 1).

Regarding claims 31-33, Huang discloses a node (120, fig. 1) for connection in an optical communication network (col. 1, lines 3-5) and including a regenerator (150, fig. 1).

6. Claim 51 is rejected under 35 U.S.C. 102(b) as being anticipated by Cotter et al. (US Patent No: 5,912,753).

Regarding claim 51, Cotter teaches an optical network (col. 3, lines 54-67 and fig. 1) in which bit-asynchronous regenerators (col. 9, lines 14-20) are located at switching nodes (col. 3, lines 55-56, 66-67 and 1x2 routing switches in fig. 2).

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alan Huang (EP Publication No: 0 589 617 A1) in view of Sakaguchi et al. (US Patent No: 4,764,980).

Regarding claim 20, Huang differs from the claimed invention in that Huang does not disclose operating a communication network that is comprised of a plurality of nodes interconnected by an optical transmission medium. Sakaguchi teaches a communication network (fig. 1) that is comprised of a plurality of nodes (Node A, Node B, Node C) and repeaters (R_i, R_j, R_k, fig. 1) that are interconnected by an optical transmission medium (3, fig. 1). Therefore, it would have been obvious to an artisan at the time of invention to incorporate an optical regenerator repeater such as the one of Huang in different nodes of a network such as the ones taught by Sakaguchi in order to control, compensate, or suppress dispersion, and non-linearities along the transmission path. Claim 20 further requires similar limitations as recited in claim 1 above.

Regarding claim 22, Huang discloses outputting the regenerated optical packet onto optical transmission medium (145, fig. 1).

9. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoneyama (US Patent No: 6,178,022) in view of Epworth (US Patent No: 5,513,030).

Regarding claim 23, as it is understood in view of above 112 problem, Yoneyama discloses a regenerator (col. 6, lines 13-15 and fig. 4) for optical packets (Data1, Data2, fig. 4)

including a local optical pulse generator (12, fig. 4) comprising a free-running oscillator (9, fig. 4) independent in frequency (col. 6, lines 17-25). Yoneyama differs from the claimed invention in that Yoneyama does not specifically disclose the oscillator is independent in frequency and phase from a packet source. Epworth teaches a voltage controlled oscillator (34, fig. 4) having a phase/frequency control signal input (col. 3, lines 19-20) that drives a modulator (10, fig. 4). Therefore, it would have been to a person of ordinary skill in the art at the time of invention to incorporate an oscillator with frequency/phase control such as the one of Epworth for the oscillator in the optical transmission system of Yoneyama in order to drive the modulator to provide pulse retiming and reshaping.

10. Claims 52-53 are rejected under 35 U.S.C. 102(b) as being anticipated by Alan Huang (EP Publication No: 0 589 617 A1) in view of Baran et al. (US Patent No: 4,903,261).

Regarding claim 52-53, as it is understood in view of above 112 problem, Huang differs from the claimed invention in that Huang does not disclose carrying packets in a bit-synchronous fashion. Baran teaches packets can be transmitted from one node to another bit-synchronously (col. 16, lines 17-30). Therefore, it would have been obvious to an artisan at the time of invention to incorporate a method of bit-synchronous transmission of data such as the one taught by Baran for the data transmission system of Huang in order to process multiple bits in a single cycle.

11. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Alan Huang (EP Publication No: 0 589 617 A1) in view of Sakaguchi et al. (US Patent No: 4,764,980) and in further view of Garthe et al. (US Patent No: 6,124,960).

Regarding claim 21, Huang discloses a network node (120, fig. 1) that receives optical packets (col. 2, lines 33-40) from an optical source (110, fig. 1). The combination of Huang and Sakaguchi differs from the claimed invention in that Huang and Sakaguchi do not disclose receiving at the network node optical packets from a plurality of different sources and having different respective phases. Garthe teaches an optical transmission system (figs. 1, 2) with a plurality of optical sources (10, fig. 1, 2) and a plurality of optical repeaters (14a, 14b, fig. 1), wherein optical signals, or optical packets of different sources have different respective phases (col. 3, lines 8-58 and 16, figs. 1, 2). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate an optical transmission system that generates optical signals of different phases such as the one of Garthe for the optical signal transmission system in the modified optical communication system of Huang and Sakaguchi in order to transmit a plurality of different optical data signals.

12. Claims 4-18, 26-30, 48, and 54-55 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. R. Sedighian whose telephone number is (703) 308-9063. The examiner can normally be reached on M-F (from 9 AM to 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (703) 305-4729. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

M. R. Sedighian

M. R. SEDIGHIAN
Patent Examiner
Art Unit: 2633